

## Review from Editor

Dear Author,

Thank you for your revised manuscript that carefully takes into account the remarks from the 2nd round of reviews. Your manuscript can be considered for publication after you take into account the following technical corrections.

Response: We sincerely appreciate the editor for her constructive comments on the manuscript. Our responses are listed as follows in blue. Text is revised accordingly.

L.26: « *by Stokes drift* » → « *by the Stokes drift* »

L.30: « *the effects of Stokes drift* » → « *the effects of the Stokes drift* »

L.45: « *shear of Stokes drift* » → « *the shear of the Stokes drift* »

L.50: « *assessed from* » → « *considering* »

L.62: « *reaching maximum* » → « *reaching a maximum* »

L.73: « *has been released with great flexibility* » → « *has been assembled* »

L.76: « *it takes sufficient periods* » → « *it takes significant time* »

L.77: « *impact of individual wave process* » → « *impact of individual wave processes* »

L.78-90: *use present tense everywhere*

L.82: « *The CFSv2.0 is a coupled system with the main application for ...* » → « *The CFSv2.0 is a coupled system mainly applied for ...* »

Response: Thanks. We have modified the manuscript according to all these comments.

L.84: *the sentence on work at NCEP should be moved up at the end of the previous paragraph (L.74)*

Response: As suggested, “The National Centers for Environmental Prediction (NCEP) is establishing its atmosphere-ocean-wave system, in which the Global Forecast System (GFS; the atmosphere module in the Climate Forecast System model version 2.0) is one-way coupled with the WAVEWATCH III (WW3)” is moved to Line 74-76.

L.105: « *The MOM4* » → « *MOM4* »

L.106: « *with the enhanced horizontal resolution to 0.25°* » → « *with horizontal resolution enhanced to 0.25°* »

L.121: « *then generates and evolves* » → « *generates* »

L.149: « *which include* » → « *which includes* » (*as I think it refers to the « energy balance equation »*)

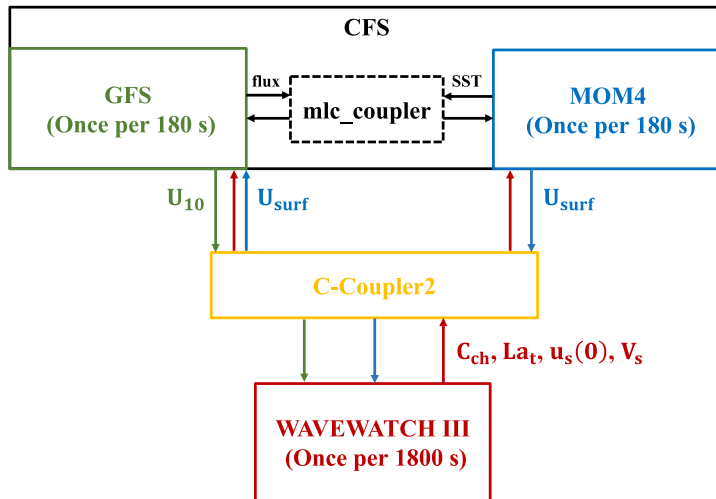
L.230: « *the estimates of them are* » → « *their estimate is* »

L.292: « *results was presented. Comparisons were made* » → « *results is presented. Comparisons are made* »

Response: Done. Thanks.

On Figure 1,  $u_s(0)$  appears twice from WAVEWATCH III and C-Coupler2

Response: We apologize for the confusion. Figure R1 (Figure 1 in text) is updated accordingly.



**Figure R1.** A schematic diagram of the atmosphere-ocean-wave coupled modeling system. The arrows indicate the coupled variables that are passed between the model components. In the diagram,  $C_{ch}$ ,  $La_t$ ,  $u_s(0)$ ,  $V_s$ ,  $U_{10}$ , and  $U_{surf}$  are Charnock parameter (red arrows), turbulent Langmuir number (red arrows), surface Stokes drift velocity (red arrows), Stokes transport (red arrows), 10-m wind (green arrows) and surface current (blue arrows), respectively.

L.422: « CFSv2.0 for global oceans from 78oS-78oN » → « CFSv2.0 over the domain 78oS-78oN »

L. 436: « the smaller ocean » → « the relatively smaller ocean »

L.439: « are overestimated » → « were overestimated »

L.466: « The case studies » → « Our case studies »

Response: Thanks. We have modified the manuscript according to all these comments.

L.469: «What do you mean by « extra adjusting », please be more precise; at least, change « adjusting » for « adjustment »

Response: We apologize for the confusion. Text is revised to “In addition, every individual model component could be further improved via new parameter settings or updated parametrization schemes”.

L. 470-471: « All these require further efforts to investigate efficient methods to improve fully coupled systems. » → «All these aspects will need to be considered for improving our coupled system. »

Response: Done. Thanks.

With very best regards